



# Sustainable Communities Program

## CAL Green Code Changes for 2013 Residential Compliance Training

**July 16, 2014**

**Presented by:  
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# CALGreen 2013

- Who is here?
- Experience with CALGreen...
- Welcome Chula Vista City Staff



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# Topics

- CALGreen and the California Building Code
- Chula Vista Municipal Code and Green Building Ordinances, Rebates and Incentives
- CALGreen Residential Mandatory Measures
- CALGreen Residential Voluntary Measures



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## “THE CALGREEN STORY...”

While CALGreen goes into effect in a matter of days it has actually been years in the making. Governor Arnold Schwarzenegger made the greening of California a high priority for his administration. In 2004, Executive Order S-20-04 created the “Green Building Action Team” that established efficiency measures for state-owned buildings, with a goal of reducing grid-based electricity by 20% in the year 2015. Under the guidance of the Green Building Action Team, the Department of General Services (DGS) established green building policies for new and existing state buildings. In 2005, Executive Order S-03-05 established the “Climate Action Team” (CAT) and called for an overall reduction in greenhouse gas emissions in California.



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# CALGreen History



- Governor directs state agencies in 2007/2008 to develop green building standards for residential, commercial, and public building construction for the 2010 code adoption process.
- State agencies with authority to develop building codes worked together with industry stakeholders to develop the first-in-the-nation statewide green building standards.



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# Result- CALGreen:

- **2008 Voluntary Code**  
(effective 8/1/09)
- **2010 First Mandatory Green Code**  
(effective 1/1/11)
- **2013 Mandatory Green Code with increased measures**  
(effective 1/1/14)



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## Title 24, California Code of Regulations

### 2013 California Building Standards Code (CBC)

- Part 1 California Administrative Code
- Part 2 California Building Code
- Part 2.5 California Residential Code
- Part 3 California Electrical Code
- Part 4 California Mechanical Code
- Part 5 California Plumbing Code
- Part 6 California Energy Code
- Part 7 Vacant
- Part 8 California Historical Building Code
- Part 9 California Fire Code
- Part 10 California Existing Building Code
- Part 11 California Green Building Standards Code
- Part 12 California Referenced Standards Code



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# CALGreen is not a stand alone code

Enforced like other California codes

Coordinated with other California codes

Coordinated with Local Municipal codes

Maintains current relationship between enforcing agencies and builders

Establishes Uniformity and Consistency



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# CALGreen and the City of Chula Vista

## Chapter 15.12 GREEN BUILDING STANDARDS

### **15.12.001 California Green Building Standards Code, 2013 Edition, adopted by reference.**

There is hereby adopted by reference the California Green Building Standards Code, 2013 Edition, known as the California Code of Regulations, Title 24, Part 11, as copyrighted by the California Building Standards Commission. Said document is hereby adopted as the green building code of the City of Chula Vista for enhancing the design and construction of buildings, building additions and alterations through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices, excepting such portions as are hereinafter deleted, modified, or amended. Chapter [15.06](#) CVMC shall serve as the administrative, organizational and enforcement rules and regulations for this chapter. (Ord. 3287 § 1, 2013).



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# City of Chula Vista is Green and Clean

On February 19, 2009 the City of Chula Vista Solar Ready Ordinances became effective for all new residential buildings:

Section 15.28.015 Solar water heater pre-plumbing.

Section 15.24.065 Photovoltaic pre-wiring requirements.

On February 26, 2010 the Chula Vista Energy Efficiency Ordinance became effective. It established a requirement for increased energy efficiency in new construction, which is known as a reach code. That ordinance expired when the new California Energy Code became effective July 1, 2014.



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# CALGreen and the City of Chula Vista

## Chapter 15.12 GREEN BUILDING STANDARDS

### **15.12.005 California Green Building Standards Code Subsection 102.4.**

Subsection 102.4 is hereby added to Section 102 of the California Green Building Standards Code, as it applies in Chula Vista, and shall read as follows:

102.4 Consultant Services. The Building Official may require the applicant to retain the services of a consultant having expertise in Green Building and/or energy efficiency techniques to review and evaluate complex systems and/or alternate methods or materials of construction and provide recommendations as to compliance with the requirements of this code. The cost of such consultant shall be paid by the applicant.

(Ord. 3287 § 1, 2013).



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# City of Chula Vista Departments and CALGreen Requirements and Resources



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# City of Chula Vista Departments and CALGreen

## Requirements and Resources

### **Chula Vista Municipal Code**

### **Chapter 14.20 STORM WATER MANAGEMENT AND DISCHARGE CONTROL**

#### **14.20.010 Purpose and intent.**

The purpose of this chapter is to promote the health, safety, and general welfare of the citizens of the City of Chula Vista by:

- A. Prohibiting non-storm water discharges to the storm water conveyance system.
- B. Preventing discharges to the storm water conveyance system from spills, dumping or disposal of materials other than storm water.



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## **Chula Vista Municipal Code**

### **Chapter 14.20 STORM WATER MANAGEMENT AND DISCHARGE CONTROL**

#### **14.20.010 Purpose and intent. (cont.)**

C. Reducing pollutants in storm water discharges, including those pollutants taken up by storm water as it flows over urban areas (“urban runoff”), to the maximum extent practicable.

D. Reducing pollutants in storm water discharges in order to achieve applicable water quality objectives for surface waters in San Diego County.

The intent of this chapter is to protect and enhance the water quality of our watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the Clean Water Act (33 USCA Section 1251, et seq.) and its implementing regulations, the Porter-Cologne Water Quality Control Act (California Water Code Section 13020, et seq.) and its implementing regulations, and the San Diego Regional Water Quality Control Board (NPDES Permit No. CA 0108758) and any subsequent amendments thereto. (Ord. 2854 § 1, 2002; Ord. 2597 § 11, 1994).



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# City of Chula Vista Departments and CALGreen

## Requirements and Resources

### **Chapter 15.04 EXCAVATION, GRADING, CLEARING, GRUBBING AND FILLS\***

**15.04.018 Additional planning, design, construction, and post-construction requirements for all land development and redevelopment projects.**

The City of Chula Vista Development Storm Water Manual is a part of this chapter and is incorporated by reference as though set forth in full in this chapter. No land owner or development project proponent in the City of Chula Vista shall receive any City permit or approval for land development activity or significant redevelopment activity unless the project meets or will meet the requirements of this chapter and the Development Storm Water Manual.



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# City of Chula Vista Departments and CALGreen

## Requirements and Resources

### **Chapter 15.04 EXCAVATION, GRADING, CLEARING, GRUBBING AND FILLS\*** **15.04.018 Additional planning, design, construction, and post-construction requirements for all land development and redevelopment projects. (cont.)**

A. The Development Storm Water Manual includes, among other requirements, the following requirements:

1. Phased grading during construction (limitation of grading to a maximum disturbed area before either temporary or permanent erosion controls are implemented);
2. Compliance with low impact development (LID) principles;
3. Compliance with interim hydromodification criteria and hydrograph modification management plan (HMP) requirements;
4. Compliance with post-construction best management practices self inspections, maintenance, record keeping, and maintenance certification.



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# CALGreen Chapters

- Chapter 1 Administration
- Chapter 2 Definitions
- Chapter 3 Green Building
- Chapter 4 Residential Mandatory Measures
- Chapter 5 Non Residential Mandatory Measures
- Chapter 6 Referenced Organizations and Standards
- Chapter 7 Installer and Special Inspector Qualifications
- Chapter 8 Compliance Forms and Worksheets
- Appendix A4 Voluntary Tiers (Residential)
- Appendix A5 Voluntary Tiers (Nonresidential)

Today we will cover the Chapters 1, 2, 3, 4, 7 and Appendix A4



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# CALGreen Intent

101.2 Purpose. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories:

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental quality.



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# Chapter 1 Administration



**REVISED**

## Chapter 1 - Administration 101.3.1

REVISED: Expands the scope of CALGreen to include ALL low-rise, high-rise, and hotel/motel buildings of Group R occupancy.

2010 code limits scope to Low rise



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# Chapter 2 Definitions

## NEW

All definitions are moved from individual Chapters to Chapter 2.

## REVISED

Modifies "residential building" to include "low-rise residential buildings" and "high-rise residential buildings."

## REVISED

Clarifies "low-rise residential building" as a Group R occupancy that is 3 stories or less and deletes reference to one- or two-family dwellings or townhouses.

## NEW

Defines "high-rise residential building" as a Group R occupancy that is 4 stories or greater in height.



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# Chapter 3 GREEN BUILDING

City of Chula Vista added this provision into the Municipal Code in 2010  
Chapter 15.12

**NEW**

## **Section 301 General-**

### **3.1.1 Additions and alterations.**

**The mandatory provisions of Chapter 4 shall be applied to additions and alterations of existing buildings where the addition or alteration increases the building's conditioned area, volume or size the requirements shall apply only to and /or within the specific area of the addition or alteration.**



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# Chapter 3 GREEN BUILDING

## 301.2 Low-Rise and High-Rise Residential Buildings

**NEW**

Clarifies that CALGreen may apply to either low-rise or high-rise residential buildings or both.

**NEW**

New “banners” [LR] and [HR+] as identifying provisions applying only to low-rise or high-rise residential structures, respectively.



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# Chapter 4

## Residential Mandatory Measures

### Division 4.1 Planning and Design

#### Section 4.106 **Site development**

#### 4.106.2 Storm Water Drainage and Retention During Construction



#### **NO CHANGE FROM 2010 CALGREEN**

Projects which disturb less than one acre of soil and are not part of a larger common plan of development shall manage storm water drainage during construction.



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# Stormwater Management

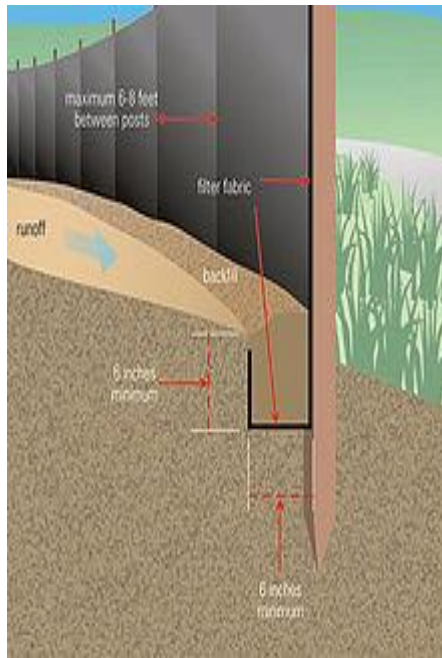
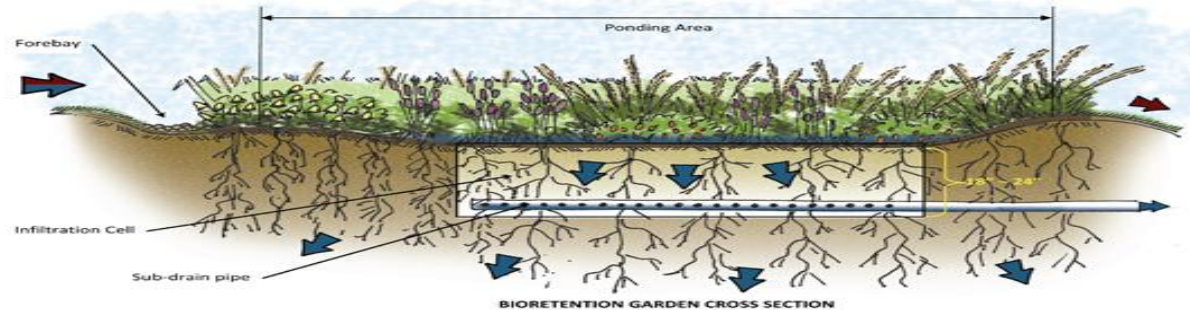
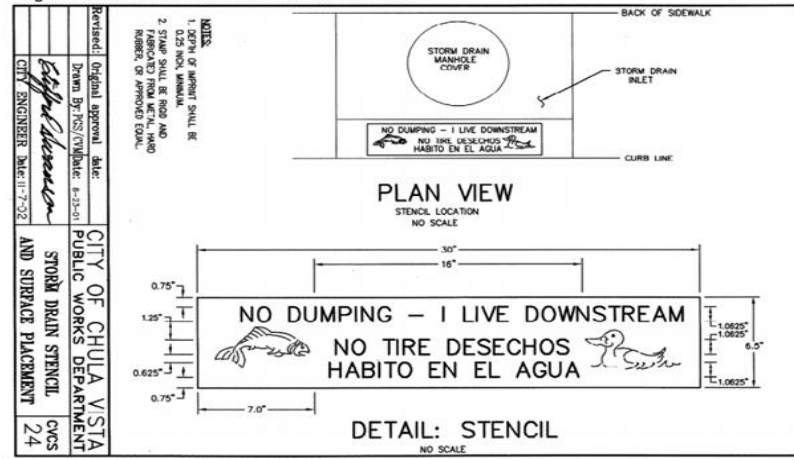


Figure 6.1 Storm Drain Stencil and Surface Placement



# Chapter 4

## Residential Mandatory Measures

### 4.106.3 Grading and Paving

#### NO CHANGE FROM 2010 CALGREEN

Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings.

**NEW**

*EXCEPTION: Revision provides an exception for additions and alterations not altering the drainage path.*



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# Chapter 4

## Residential Mandatory Measures

### 4.2 - ENERGY EFFICIENCY 4.201.1 Scope

#### **REVISED**

Energy efficiency requirements for low-rise residential (Section 4.201.1) and high-rise residential/hotel/motel (Section 5.201.1) are now in both residential and nonresidential chapters of CALGreen.

#### **REVISED**

Standards for residential buildings do not require compliance with levels of minimum energy efficiency beyond those required by the 2013 California Energy Code [code reference date updated from 2011 to 2013].



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# Chapter 4

## Residential Mandatory Measures

### Division 4.3 - WATER EFFICIENCY AND CONSERVATION (INDOOR WATER USE)

#### 4.303.1 Water Conserving Plumbing Fixtures and Fittings

**REVISED**

20% reduction of water use are now prescriptively designated within CALGREEN text.

**REPEALED**

Prescriptive and performance methodology, Tables 4.303.1 and 4.303.2



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# Residential Mandatory Measures

**NEW**

Plumbing fixtures and fittings shall comply with the following:

4.303.1.1 Waters Closets: = **1.28 gal/flush**

4.303.1.2 Urinals: = 0.5 gal/flush

4.303.1.3.1 Single Showerheads: = **2.0 gpm @ 80 psi**

4.303.1.3.2 Multiple Showerheads: combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gpm @ 80 psi or only one shower outlet is to be in operation at a time

4.303.1.4.1 Residential Lavatory Faucets: = **1.5 gpm @ 60 psi**

4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas of Residential Buildings: = 0.5 gpm @ 60 psi

4.303.1.4.3 Metering Faucets: = 0.25 gallons per cycle

4.303.1.4.4 Kitchen Faucets: = **1.8 gpm @ 60 psi**; temporary increase to 2.2 gpm allowed but shall default to 1.8 gpm



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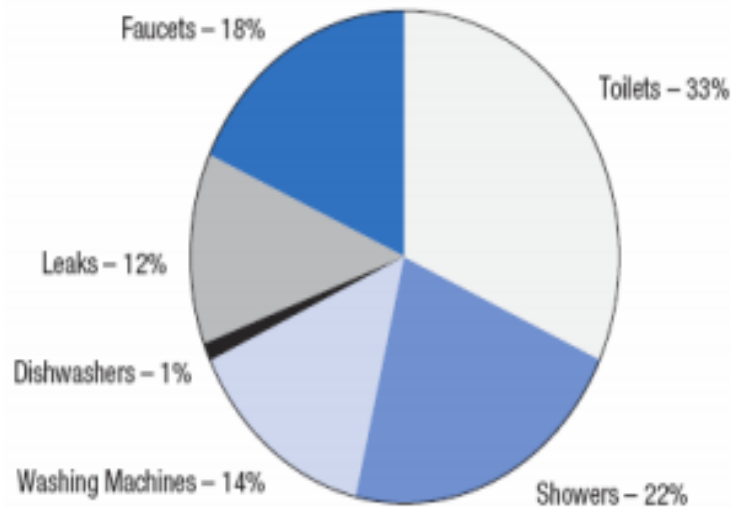




# Chapter 4

## Residential Mandatory Measures

Division 4.3 WATER EFFICIENCY AND CONSERVATION



### Section 4.303.2 Standards for Plumbing Fixtures and Fittings

#### REVISED

Specifies that plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code.

#### REVISED

Relocates provisions for multiple showerheads to Section 4.303.1.3.2.

#### REPEALED

Table 4.303 "Standards for Plumbing Fixtures and Fixture Fittings." Code users are directed, in Section 4.303.2, to the California Plumbing Code for applicable reference standards.



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# Chapter 4

## Residential Mandatory Measures

### Division 4.3 WATER EFFICIENCY AND CONSERVATION

#### Section 4.304.1 Irrigation Controllers

##### **NO CHANGE FROM 2010 CALGREEN**

**Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:**

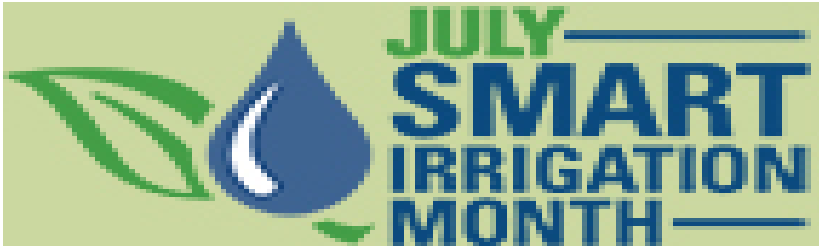
**1 - Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plant watering needs as weather or soil conditions change.**

**2 - Weather-based controllers without integral rain sensors or communication systems that account for rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s).**



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# Chapter 4 Residential Mandatory Measures

## Division 4.4 - MATERIAL CONSERVATION & RESOURCE EFFICIENCY (ENHANCED DURABILITY & REDUCED MAINTENANCE)

### Internet Center for Wildlife Damage Management

<http://icwdm.org/handbook/rodents/RodentExclusion>

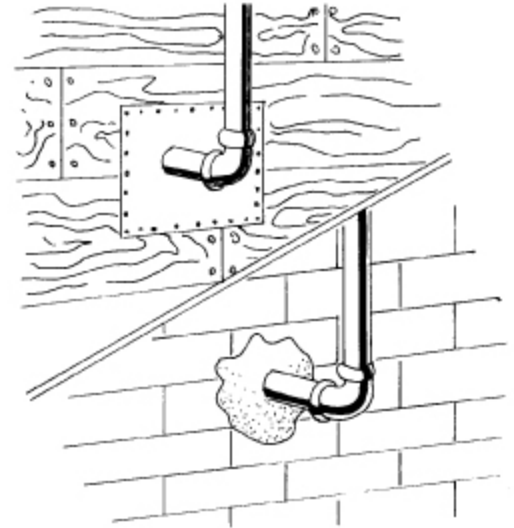
#### 4.406.1

#### Rodent Proofing

#### REVISED

Specifies the areas needing rodent proofing are sole/bottom plates.

Annular spaces around pipes, electric cables, conduits, or other openings in sole/bottom plates at exterior walls shall be closed with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency to prevent passage of rodents.



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# Chapter 4

## Residential Mandatory Measures

### Division 4.4 - MATERIAL CONSERVATION & RESOURCE EFFICIENCY

#### 4.408.1 Construction Waste Reduction of at least 50%

##### NO CHANGE FROM 2010 CALGREEN

- Recycle and/or salvage for reuse a minimum of 50% of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4; OR meet a more stringent local construction and demolition waste management ordinance.
- Documentation is required per Section 4.408.5.
- Exceptions:
  - 1 - Excavated soil and land-clearing debris.
  - 2 - Alternate waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
  - 3 - The enforcing agency may make exceptions to the requirements of this section when isolated job sites are located in areas beyond the haul boundaries of the diversion facility.



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# Chapter 4

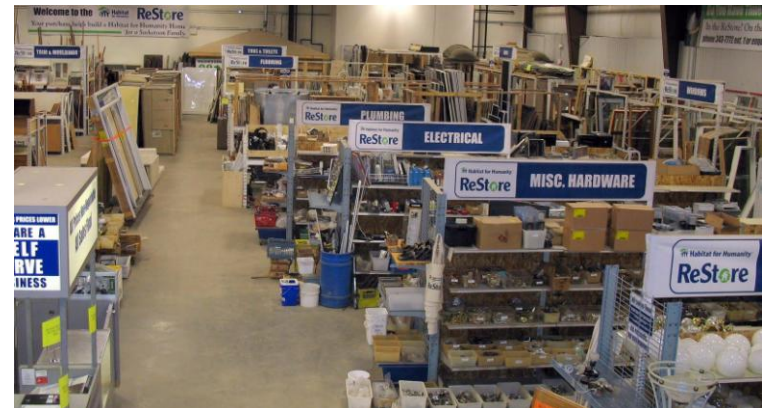
## Residential Mandatory Measures

### Division 4.4 - MATERIAL CONSERVATION & RESOURCE EFFICIENCY

#### 4.408.2 Construction Waste Management Plan

##### NO CHANGE FROM 2010 CALGREEN

- Submit a construction waste management plan meeting Items 1 through 5 in Section 4.408.2.
- Plans shall be updated as necessary and shall be available for examination during construction.



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# Chapter 4

## Residential Mandatory Measures

Division 4.4 - MATERIAL CONSERVATION & RESOURCE EFFICIENCY



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# Chapter 4

## Residential Mandatory Measures

Division 4.4 - MATERIAL CONSERVATION & RESOURCE EFFICIENCY  
CONSTRUCTION WASTE REDUCTION, DISPOSAL & RECYCLING

### Section 4.408.3 Waste Management Company

#### NO CHANGE FROM 2010 CALGREEN

- Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that diverted construction and demolition waste materials meet the requirements in Section 4.408.1.



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# Chapter 4

## Residential Mandatory Measures

### Division 4.4 - MATERIAL CONSERVATION & RESOURCE EFFICIENCY

#### 4.408.4

#### Waste Stream Reduction Alternative

**4.408.4 Generate a total combined weight of construction and demolition waste disposed in landfills that is equal to or less than 4 pounds per square-foot of the building area.**

**NEW**

**Adds Section 4.408.4.1 to acknowledge a high-rise residential compliance alternative.**

**4.408.4.1 [HR+] Generate a total combined weight of construction and demolition waste disposed in landfills that is equal to or less than 2 pounds per square-foot of the building area.**



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# Chapter 4

## Residential Mandatory Measures

### Division 4.410 Building Maintenance and Operation

#### 4.410.1 Operation and Maintenance Manual

##### **NO CHANGE FROM 2010 CALGREEN**

**At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which covers 10 specific subject areas shall be placed in the building.**

**A template is available online.**

- CALGreen website
  - <http://www.hcd.ca.gov/CALGreen.html>



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# Chapter 4

## Residential Mandatory Measures

### Division 4.5 Environmental quality (fireplaces)



#### 4.503.1 General

##### NO CHANGE FROM 2010 CALGREEN

- Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with all applicable local ordinances.



# Chapter 4

## Residential Mandatory Measures

Division 4.5 Environmental quality (Pollutant Control)



### 4.504.1 Covering of Duct Openings and Protection of Mechanical Equipment During Construction

#### NO CHANGE FROM 2010 CALGREEN

- At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air intake and distribution component openings shall be covered. Tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris entering the system may be used.

# Chapter 4

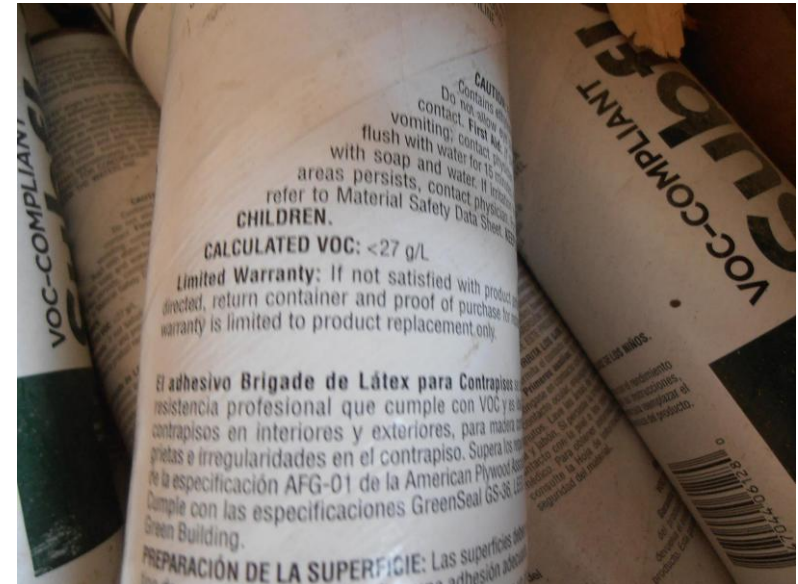
## Residential Mandatory Measures

Division 4.5 Environmental quality (Pollutant Control)

### 4.504.2.1 Adhesives, Sealants and Caulks

#### NO CHANGE FROM 2010 CALGREEN

- Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply.



# Chapter 4

## Residential Mandatory Measures

Division 4.5 Environmental quality (Pollutant Control)

### 4.504.2.2 Paints and Coatings

#### **NO CHANGE FROM 2010 CALGREEN**

- Architectural paints and coatings shall comply with VOC limits in Table 1 of the Air Resources Board Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply.

### 4.504.2.3 Aerosol Paints and Coatings

#### **NO CHANGE FROM 2010 CALGREEN**

- Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements



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# Chapter 4

## Residential Mandatory Measures

### Division 4.5 Environmental quality (Pollutant Control)

#### 4.504.3 Carpet Systems

##### NO CHANGE FROM 2010 CALGREEN

- All carpet installed in the building interior shall meet the testing and product requirements.

#### 4.504.3 Carpet Cushion

##### NO CHANGE FROM 2010 CALGREEN

- All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label Program



#### 4.504.3.2 Carpet Adhesive

##### NO CHANGE FROM 2010 CALGREEN

- All carpet adhesives shall meet the requirements of Table 4.504.1



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# Chapter 4

## Residential Mandatory Measures

### Division 4.5 Environmental quality (Pollutant Control)

#### 4.504.4 Resilient Flooring Systems

##### REVISED:

Compliance rate of resilient flooring is increased from 50% to 80%. Related changes are made for Tier 1 and Tier 2 resilient flooring measures.

Where resilient flooring is installed, at least 80% of floor area receiving resilient flooring shall comply with one or more of the following:

1 - VOC emission limits defined in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.

2 - Products compliant with CHPS criteria certified under the Greenguard Children & Schools program.



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## Division 4.5 Environmental quality (Pollutant Control)

### 4.504.4 Resilient Flooring Systems (cont)

3 - Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.

4 - Meet the California Department of Public Health, “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers,” Version 1.1, February 2010 (also known as Specification 01350.)



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# Chapter 4

## Residential Mandatory Measures

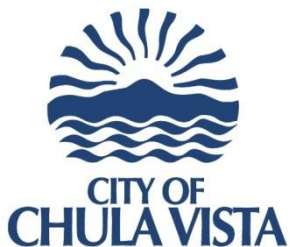
Division 4.5

Environmental quality (Pollutant Control)

### 4.504.5 Composite Wood Products

#### NO CHANGE FROM 2010 CALGREEN FOR 4.504.5.

- Referenced Table 4.504.5 has been revised to delete obsolete compliance dates.
- Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in the Air Resources Board's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et. seq.), on or before the dates specified in those sections as shown in Table 4.504.5. Documentation is required per Section 4.504.5.1.



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# Chapter 4

## Residential Mandatory Measures

### Division 4.5 Interior Moisture Control

#### 4.505.2 Concrete Slab Foundations

##### **NO CHANGE FROM 2010 CALGREEN**

Concrete slab foundations or concrete slab-on-ground floors required to have a vapor retarder by the California Building Code, Chapter 19 shall comply with this section.

- 4.505.2.1 A capillary break shall be installed in compliance with at least one of the following:
1. A 4-inch (101.6 mm) thick base of 1/2-inch (12.7 mm) or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design which will address bleeding, shrinkage and curling shall be used.
  2. Other equivalent methods approved by the enforcing agency.
  3. A slab design specified by a licensed design professional.



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# Chapter 4

## Residential Mandatory Measures

### Division 4.5 Interior Moisture Control

#### 4.505.3 Moisture Content of Building Materials

##### NO CHANGE FROM 2010 CALGREEN

- Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Moisture content shall be verified.



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# Chapter 4

## Residential Mandatory Measures

### Division 4.5 Indoor Air Quality & Exhaust

#### 4.506.1 Bathroom Exhaust Fans

##### NO CHANGE FROM 2010 CALGREEN

- Each bathroom shall be mechanically ventilated and shall comply with the following:
  - 1 - Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
  - 2 - Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
- Humidity controls shall be capable of manual or automatic adjustment between a relative humidity range of less than 50% to a maximum of 80%.
- A humidity control may be a separate component to the exhaust fan and is not required to be integral or built-in.



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## 4.506.1 Bathroom Exhaust Fans



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# Chapter 4

## Residential Mandatory Measures

### Division 4.5 Environmental Comfort

#### 4.507.2 Heating and Air Conditioning System Design

##### NO CHANGE FROM 2010 CALGREEN

- Heating and air conditioning systems shall be sized, designed, and equipment selected using the following methods:
  - 1 - The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - 2004 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
  - 2 - Duct systems are sized according to ANSI/ACCA 1 Manual D - 2009 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
  - 3 - Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2004 (Residential Equipment Selection) or other equivalent design software or methods



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# Chapter 7

## Installer and Special Inspector Qualifications

### Section 702. Qualifications

#### 702.1 Installer Training

##### **NO CHANGE FROM 2010 CALGREEN**

HVAC system installers shall be trained and certified in the proper  
Installation of HVAC systems and equipment by a recognized training

#### 702.2 Special Inspection

##### **NO CHANGE FROM 2010 CALGREEN**

Special inspectors must be qualified and able to demonstrate competence to the  
enforcing agency in the discipline in which they are inspecting.



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# Chapter 7

## Section 703 Verifications

### 703.1 Documentation

#### NO CHANGE FROM 2010 CALGREEN

- Documentation of compliance shall include, but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the local enforcing agency. Other specific documentation or special inspections necessary to verify compliance are specified in appropriate sections of CALGreen.



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# Residential Voluntary Measures

## Appendix A4



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# Appendix A4

## Residential Voluntary Measures

### Section 304 Voluntary Tiers

**304.1 Purpose.** Voluntary measures are intended to further encourage building practices that improve public health, safety and general welfare by promoting the use of building concepts which minimize the building's impact on the environment and promote a more sustainable design.

- Voluntary Tiers may be adopted by local Governments.
- Tiers contain additional prerequisite and elective green building measures necessary to meet the threshold of each tier.



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# Residential Voluntary Measures

## Appendix A4 Tier 1



[http://www.walkscore.com/CA/Chula\\_Vista](http://www.walkscore.com/CA/Chula_Vista)

A4.103.1 Community connectivity  
Close to basic services

A4.105.2 Reuse of materials

A4.203.1.1.2 Quality Insulation Installation  
(QII)

A4.304.2 Rainwater catchment system

A4.407.3 Flashing details

A4.504.1 Formaldehyde limits



# Sustainable Communities Program



# Residential Voluntary Measures

## Appendix A4 Tier 1



### **Tier 1 Prerequisite and Elective measures.**

#### **No Change**

#### **A4.1 Planning and Design**

Two (2) Planning and Design elective measures.

Three (3) prerequisites:

A4.106.2.3 Topsoil protection,

A4.106.4 20 percent permeable paving

A4.106.5 Cool roof.

#### **Revised**

#### **A4.2 Energy Efficiency**

All 2010 Energy Efficiency electives  
repealed and replaced with 2013 prerequisites.



# Residential Voluntary Measures

## Appendix A4 Tier 1

### Tier 1 Prerequisite and Elective measures.

Change

#### A4.3 Water Efficiency and Conservation

Two (2) Water Efficiency elective measures

Two (2) prerequisites

A4.304.3 Landscape irrigation water budget  
65 percent ETo

A4.304.4 Potable water use reduction for  
landscape irrigation design



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# Residential Voluntary Measures

## Appendix A4

### **Tier 1 Prerequisite and Elective measures.**

#### **No Change**

#### **A4.4 Material Conservation and Resource Efficiency**

Two (2) Material Conservation and Resource Efficiency elective measures.

Three (3) prerequisites

A4.403.2 20 percent cement reduction

A4.405.3.1 10 percent recycled content

A4.408.1 65 percent reduction in construction waste

#### **Revised**

#### **A4.5 Environmental Quality**

One (1) Environmental Quality elective measure.

Two (2) prerequisites

A4.504.2 90 percent resilient flooring

A4.504.3 Thermal insulation VOC emission limits



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# Residential Voluntary Measures

## Appendix A4 Tier 2



Tier 2 provides further advanced measures.

Municipalities choose measures that align with regional priorities and opportunities.



## Sustainable Communities Program



# Residential Voluntary Measures

## Appendix A4 Tier 2

### Tier 2 Prerequisite and Elective measures.

#### No Change

#### A4.1 Planning and Design

Four (4) Planning and Design elective measures.

Three (3) prerequisites:

- A4.106.2.3 Enhanced topsoil protection
- A4.106.4 30 percent permeable paving
- A4.106.5 Cool roof.



#### Revised

#### A4.2 Energy Efficiency

All 2010 Energy Efficiency electives  
repealed and replaced with 2013 prerequisites.

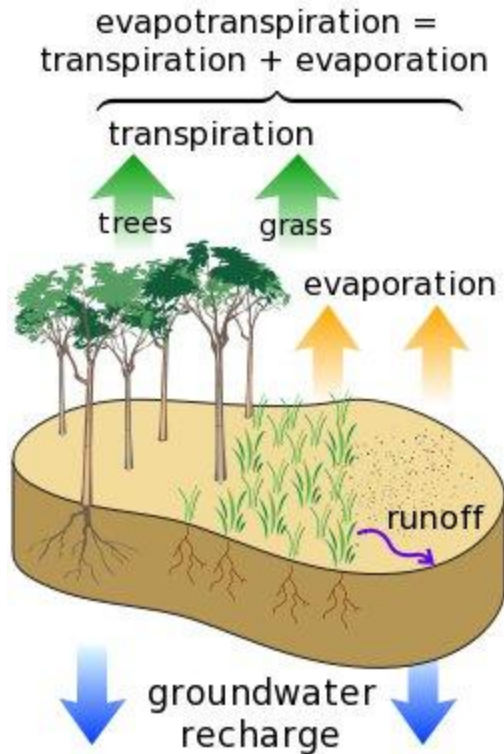


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# Residential Voluntary Measures

## Appendix A4



### Tier 2 Prerequisite and Elective measures.

Change

#### A4.3 Water Efficiency and Conservation

Three (3) Water Efficiency elective measures

Two (2) prerequisites

A4.304.3 Landscape irrigation water budget  
60 percent ETo

A4.304.4 Potable water use reduction for  
landscape irrigation design



# Residential Voluntary Measures

## Appendix A4

### **Tier 2 Prerequisite and Elective measures.**

#### **No Change**

#### **A4.4 Material Conservation and Resource Efficiency**

Two (2) Material Conservation and Resource Efficiency elective measures.

Three (3) prerequisites

A4.403.2 25 percent cement reduction

A4.405.3.1 15 percent recycled content

A4.408.1 75 percent reduction in construction waste

#### **Revised**

#### **A4.5 Environmental Quality**

One (1) Environmental Quality elective measure.

Two (2) prerequisites

A4.504.2 100 percent resilient flooring

A4.504.3 Thermal insulation contains no formaldehyde



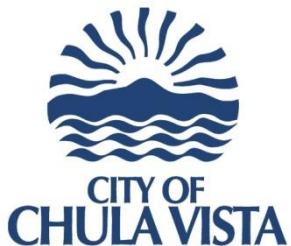
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# Residential Voluntary Measures

## Appendix A4

### Changes, Additions, Revisions A4.1 - A4.5



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# Division A4.1 Planning and Design

## Changes

### Revisions

- Revised tier item: Cool roof for reduction of heat island effect (A4.106.5)
- Revised elective: Electric vehicle charging (renumbered to A4.106.8)
- Repealed elective: Building orientation (A4.106.1)

### New electives:

- Community connectivity (A4.103.2)
- Vegetated roof (A4.106.6)
- Reduction of heat island effect for non roof areas (A4.106.7)
- Bicycle parking (A4.106.9)
- Light pollution for High-Rise buildings (A4.106.10)



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# Division A4.2 Energy Efficiency

## Changes

### Revisions to Division A4.2 Energy Efficiency

- HCD has repealed all 2010 provisions related to voluntary energy efficiency in Low-Rise residential buildings in Division A4.2.
- The California Energy Commission (CEC) has developed and will be maintaining provisions related to energy efficiency in CALGreen.
- California Energy Code voluntary energy efficiency provisions related to residential buildings will be added to the following Divisions: A4.2



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# Division A4.2 Energy Efficiency

## Changes

### 2010 Tier 1 Prerequisites

- New construction Low-Rise  
Exceed the 2010 California Energy Code (CEC) requirements by 15%.

### 2013 Tier 1 Prerequisites

- New construction Low-Rise Energy Budget no greater than 85 percent of the 2013 CEC Energy Budget for the Proposed Design Building as calculated by Compliance Software PLUS Energy design rating computed by Compliance Software.
- Quality Insulation Installation as specified in the Building Energy Efficiency Standards Reference Residential Appendix RA3.5.
- Lighting requirements as specified.



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# Division A4.2 Energy Efficiency

## Changes

### 2010 Tier 2 Prerequisites

- New construction Low-Rise

Exceed the 2010 California Energy Code (CEC) requirements by 30%.

### 2013 Tier 2 Prerequisites

- New construction Low-Rise Energy Budget no greater than 85 percent of the 2013 CEC Energy Budget for the Proposed Design Building as calculated by Compliance Software PLUS Energy design rating computed by Compliance Software.
- Quality Insulation Installation as specified in the Building Energy Efficiency Standards Reference Residential Appendix RA3.5.
- Lighting requirements as specified.



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# Appendix A4.3 Water Efficiency and Conservation Changes

## Revisions to Division A4.3

- Repealed tier item: Kitchen faucets and dishwashers (A4.303.1)

## Revised electives:

- Nonwater supplied urinals and waterless toilets (renumbered to A4.303.2)



# Appendix A4.3 Water Efficiency and Conservation Changes



Revised electives:

- Rainwater catchment systems (A4.303.4)
- Recycled water piping (A4.305.2)

New electives:

- Kitchen faucets (A4.303.1) (formerly a Tier 1 requirement)
- Alternate water sources for non potable applications (A4.303.2)
- Appliances (dishwashers and clothes washers) (A4.303.3)
- Irrigation metering device (submeter) for irrigated areas > 2500 sq. ft. (A4.304.6)



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# Appendix A4.4, Material Conservation and Resource Efficiency Changes

Revisions to Division A4.4 Material Conservation and Resource Efficiency

- No changes to tier or elective measures.



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# A4.5 Environmental Quality

## Changes

### Revisions to Division A4.5 Environmental Quality

- Revised tier item: Resilient flooring systems (A4.504.2)
- Tier 1 increased from 80% to 90%
- Tier 2 increased from 90% to 100% with allowance for specialty flooring

### Revised electives:

- Compliance with formaldehyde limits (A4.504.1)
- Filters (A4.506.1) New electives:  
Construction filter (HR 4+) = MERV 6 (A4.506.2)
- Direct-vent appliances (renumbered to A4.506.3)



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# CALGreen 2013

## Residential Compliance

Any questions?

Thank you for attending.

Information for this presentation was taken from the 2013 California Green Building Standards Code, the Guide to the 2013 California Green Building Standards Code and the CALGreen website

<http://www.hcd.ca.gov/CALGreen.html>



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